

Application No.: 10/023,787

Docket No.: 65858-0011

REMARKS

In the Office Action, claims 18 and 19 were allowed. Claims 15, 16, 34-36, and 44-46 were stated to contain allowable subject matter, but were objected to as depending from rejected base claims. Claims 3 and 4 were objected to for informalities. Claims 1, 3, 4, 6-13, 20-33, and 39-42 were rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over G. Baxes, 1994, *Digital image processing: principles and application* ("Baxes"), in view of U.S. Patent No. 5,715,006 ("Yokoyama") and further in view of U.S. 4,625,329 ("Ishikawa"). Claim 5 was rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Baxes in view of Yokoyama, Ishikawa, Google article, Jan. 29, 2001, "Point Operations" ("Google"), and Hentea, IEEE Publications, 1993, "Algorithm for automatic threshold determination for image segmentation" ("Hentea"). Claims 37, 38, and 43 were rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Baxes in view of Yokoyama, Ishikawa, and U.S. Patent No. 5,917,936 ("Katto").

Claims 1, 3-13, 15, 16, and 18-46 are pending in the application. Claims 1, 18, and 20 are in independent form. Claims 3 and 4 have been amended herein solely to overcome the objection to the claims set forth in the Office Action. No other amendments have been made in this paper. Claims 2, 14, and 17 were cancelled previously without prejudice.

For the following reasons, Applicant respectfully requests favorable reconsideration of the presently pending claims. Further, Applicant believes that there are also reasons other than those set forth below why the pending claims are patentable, and reserve the right to set forth those reasons, and to argue for the patentability of claims not explicitly addressed herein, in future papers.

Reasons for Allowance or Allowability

The Office Action contains a statement of reasons for the allowance or allowability of claims 15, 16, 18, 19, 34-36, and 44-46. Applicant agrees with the Examiner's conclusions regarding patentability, without necessarily agreeing with or acquiescing in the Examiner's reasoning. In particular, the application is allowable because the prior art fails to teach, anticipate or render obvious the invention as claimed.

Objection to Claims 3 and 4

Application No.: 10/023,787

Docket No.: 65858-0011

According to the Office Action:

The claims submitted on 9/15/2005 recited claims 3 and 4 depending on claim 1. However, the claims submitted with the current amendment recites [sic] claim 3 depending on itself and claim 4 depending on claim 3 and the status of the claims show "previously presented." Examiner assumed both claims 3 and 4 depending on claim 1 for rejection purposes.

Office Action, page 2. In this paper, Applicant has corrected this unintentional oversight by amending claims 3 and 4 each to depend from claim 1. Accordingly, the objection to the claims set forth in the Office Action is obviated and should be withdrawn.

Entry and consideration of the amendments to claims 3 and 4 are proper under 37 C.F.R. §1.116 at least because the amendments are made simply to correct informalities and do not raise new issues requiring further search or consideration. Therefore, entry of the amendments to claims 3 and 4 is proper under 37 C.F.R. §1.116 and is hereby requested.

§103 Rejections of Claims 1, 3-13, 20-33, and 37-43

"To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)." M.P.E.P. § 2143.03. For at least the reasons discussed below, the Office Action fails to establish a *prima facie* case of obviousness against claims 1, 3-13, 20-22, and 37-43 because the prior art of record does not teach or suggest all of the elements recited in these claims.

A. Independent Claims 1 and 20

Among other elements, independent claim 1 recites "setting the second revised pixel value includes a momentum-based heuristic." Independent claim 20 recites "[a] gap processing heuristic including a momentum-based heuristic." The momentum-based heuristic recited in each claim can be used to determine an appropriate value of a particular pixel by looking to and incorporating the pixel values of consecutive (i.e., sequential) pixels in the vicinity of the particular pixel being considered. Applicant's specification, paragraph 0047. As further stated in Applicant's specification:

Application No.: 10/023,787

Docket No.: 65858-0011

Momentum-based processing can compute the sequential number of occupant pixels 40 in either the horizontal or vertical direction (only the vertical direction in a preferred embodiment) in a particular row or column (only vertical columns in a preferred embodiment) in the ambient image 38. The underlying logic of gap-based processing is that the pixel values (relating to pixels in the vicinity of the pixel being set) can be incorporated into the pixel being set. Momentum-based processing incorporates the concept that a series of sequential occupant pixels makes it more likely that an intervening ambient pixel or two is the result of misidentification by the system 16. For example, if two pixel regions 66 are separated by a gap of 4 ambient sequential pixels 44, the "momentum" associated with the occupant pixels 40 in the two pixel regions 66 may be sufficient to fill the gap and join the two regions 66. The greater the number of sequential or consecutive occupant pixels 40, the greater the "momentum" to allow the filling of a gap of ambient pixels 40.

Applicant's specification, paragraph 0051, emphasis added.

As mentioned above, independent claims 1 and 20 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Baxes in view of Yokoyama and Ishikawa. Office Action, page 3. The Examiner relies upon Yokoyama to reject the momentum-based heuristic recited in claims 1 and 20. Specifically, the Examiner asserts that Yokoyama at col. 2, lines 41-48, "discloses motion-compensated segmentation which uses momentum (motion)-based heuristic for boundary cleanup." Office Action, page 5. Applicant respectfully disagrees. The cited section of Yokoyama states:

The information at the displaced pixel position includes information of a pixel position for which estimated value is missing in the initial predicted image, and the estimated value at a pixel position for which estimated value is missing, is favorably decided according to motion information of several areas in the proximity of the displaced pixel position.

However, the "motion information of several areas in the proximity of the displaced pixel position" as disclosed in Yokoyama is entirely different from a momentum-based heuristic as recited in claims 1 and 20, especially when the recited momentum-based heuristic is considered in the entire context of each claim and Applicant's specification.

In contrast to the recited momentum-based heuristic, the motion information of Yokoyama includes motion vectors descriptive of the motion (i.e., displacement) of the partitioned areas. Yokoyama, Figures 3A – 3E (especially Figure 3A), reference letters "A" and "B." Yokoyama discloses that the motion vectors (e.g., A and B in Figures 3A and 3B of Yokoyama) of proximate

Application No.: 10/023,787

Docket No.: 65858-0011

partitioned areas are interpolated to calculate an estimated motion vector (e.g., X in Figure 3E of Yokoyama) for a particular pixel. Yokoyama, col. 3, lines 32-35.

The motion vectors disclosed in Yokoyama are nothing more than displacement vectors descriptive of the predicted displacement (i.e., movement) of partitioned areas. The motion/displacement vectors are different from the momentum-based heuristic recited in claims 1 and 20. Accordingly, Yokoyama does not teach or suggest the momentum-based heuristic recited in claims 1 and 20. Baxes, Ishikawa, Google, and Hentea do not cure, and the Examiner does not allege that these references cure, the above-described deficiency of Yokoyama. Therefore, the Office Action fails to establish a *prima facie* case of obviousness against claims 1 and 20 because the prior art of record does not teach or suggest all of the elements recited in these claims, and the rejection of these claims should be withdrawn.

B. Dependent Claims 3-13, 21-33, and 37-43

As mentioned above, dependent claims 3, 4, 6-13, 21-33, and 39-42 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Baxes in view of Yokoyama and Ishikawa, dependent claim 5 was rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Baxes in view of Yokoyama, Ishikawa, Google, and Hentea, and claims 37, 38, and 43 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Baxes in view of Yokoyama, Ishikawa, and Yokoyama. Applicant traverses these rejections for at least the same reasons presented above with respect to independent claims 1 and 20.

Application No.: 10/023,787

Docket No.: 65858-0011

CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue. If the Examiner believes that any matters require clarification, the Examiner is encouraged to telephone the undersigned Applicant's representative.

Applicant believes that no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 18-0013, under Order No. 65858-0011, from which the undersigned is authorized to draw.

Dated: April 19, 2006

Respectfully submitted,

By 

Michael B. Stewart

Registration No.: 36,018

Jeffrey R. Jeppsen

Registration No.: 53,072

RADER, FISHMAN & GRAUER PLLC

39533 Woodward Avenue, Suite 140

Bloomfield Hills, Michigan 48304

(248) 594-0600

Attorneys for Applicant